

bypass circuit that is connected to the output terminal OUT, and to connect an opening/closing switch 40 between the bypass circuit and the input terminal IN. The present invention can also be applied to a voltage follower for both source mode and sink mode of the signal line driving part shown in FIG. 6.

In the voltage follower described in said embodiment, the constant current source circuit is switched from the on state to the off state when the input terminal IN and the output terminal OUT are shorted at the point in time when a prescribed period of time  $T_c$  has elapsed since an input signal with a prescribed voltage was input to the input terminal IN. The switching point in time, however, can also be set, in a variable manner, to correspond to the voltage level of the input signal.

It is also possible to use a comparator that compares the voltage of the input signal (or a voltage set near the voltage of the input signal) to the voltage of the output signal and to use the point in time when the comparator output varies as the switching time point.

It is also possible to stagger the timing for when the input terminal IN is connected to the output terminal OUT and the timing for when the constant current source circuit is switched from the on state to the off state (the first timing is usually the same as or later than the second timing).

The present invention is not limited to said configuration, and various modifications can be made. In particular, the configuration of the voltage followers 32L and 32R disclosed in said embodiment is only one example. The present invention can be applied to operational amplifiers or voltage followers with any configuration. The driving circuit of the present invention can be used in various applications other than a signal line driving circuit.

As explained above, by using the driving circuit of the present invention, the influence of the offset can be compensated or avoided in an easy and efficient way, and the voltage of the output signal can be correctly matched with the voltage of the input signal, that is, the target value. Also, the current consumption can be reduced significantly.

## CLAIMS

1. A driving circuit characterized by the following facts: the driving circuit has a high input impedance and a low output impedance; the driving circuit is equipped with an amplification part between the input terminal and output terminal; the driving circuit is operated in such a way that the voltage of the output signal obtained at said output terminal becomes consistent with the voltage of the input signal input to said input terminal;

from the point in time when an input signal with a prescribed voltage is input to said input terminal to the point in time when the voltage of the output signal obtained at said output

terminal reaches a level close to said prescribed voltage, said input and output terminals are electrically shorted, and said amplification part is turned off.

2. A driving circuit having the following parts:

a differential input part which can differentially input a first and a second signal;

an output part which is connected to an electric load, amplifies the output signal of said differential input part, and supplies the amplified signal to said load;

a feedback circuit which feeds back the output signal obtained from said output part as the second signal to said differential input part;

a bypass control means which can send an input signal with a prescribed voltage to said load through a circuit bypassed with respect to said differential input part and output part from the point in time when said input signal is input as the first signal to said differential input part to the point in time when the voltage of said output part reaches a level close to said prescribed voltage;

and an operation control means which turns off said differential input part and/or output part at the time when the voltage of the output signal of said output part reaches a level close to said prescribed voltage.

3. The driving circuit described in Claim 2 characterized by the fact that the aforementioned bypass circuit is comprised of the aforementioned feedback circuit.

4. The driving circuit described in Claim 3 characterized by the fact that the aforementioned bypass control means has

a switch which is connected between the first and second input terminals used for inputting, respectively, the first and second signals of the aforementioned differential input part, and

a switch control means which can keep said switch in an open state before the voltage of the output signal of the aforementioned output part reaches a level close to the aforementioned prescribed voltage and can close said switch after the voltage of the output signal of said output part reaches a level close to said prescribed voltage.

5. The driving circuit described in any of Claims 2-4 characterized by the fact that the aforementioned differential input part and/or output part includes a constant current source circuit, and

the aforementioned operation control means includes a constant current source control means which can keep said constant current source circuit in an on state before the voltage of the output signal of said output part reaches a level close to the aforementioned prescribed voltage and can turn off said constant current source circuit after the voltage of the output signal of said output part reaches a level close to said prescribed voltage.